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PROBLEMS AND THEIR SOLUTION.

WE do not refer to "sums" in arithmetic and algebra, but to those broader and more troublesome problems, whose mysteries will not yield to the assault of the four fundamental rules, — problems that reach into the domain of every learned profession, and demand the best thought, the most careful and candid observation, that they all can give.

The last half-century has been remarkable for the encroachments that machinery has made upon the realm of muscular force. Every step of this advance has been accompanied with an increased subdivision of labor, tending more and more to make mechanics specialists, skilled in a single department of manual labor. This has made prominent a want, never felt very much before, of technical schools, with their varied courses of training, designed to afford the special facilities needed by such as are aiming to achieve excellence in practical chemistry, mining, engineering, architecture, etc. The same tendency is operative in our colleges, leading students to withdraw their energies from a general course of study to concentrate them upon one more specific.

This has already given great practical importance to the question, "What are the proper limitations to this specialty of education?" How far down in our educational system shall this special training begin? What degree and what kind of control

shall be exercised over pupils, to determine the course they shall pursue? Difficulties seem to be rapidly accumulating upon those schools that must do the work of preparation for the colleges and technical schools. Not only are our leading colleges and scientific schools raising their standards of admission, but are making them more diverse. In order that they may adequately meet these demands, high schools and academies seem to be shut up to this alternative, — either to impose upon those students who purpose to enter higher schools an amount of preparatory work that will secure their admission into any institution they may severally elect; or, on the other hand, to subdivide the classes after the manner of the university, and aim to give to each division — which not unfrequently would consist of a single pupil — the special preparation desired.

But, in seeming opposition to these views, we have the claim of Prof. W. P. Atkinson. "I would earnestly maintain," he says, "that unless we treat the child in the primary school as the germ and embryo of all he is destined afterwards to become, our education will be doomed to an ignominious failure. Whatever, therefore, enters into our conception of liberal education, — and we have already seen that nothing less than all extant knowledge should enter into it, — that should enter into it from the beginning. Language and literature should be the subjects of elementary teaching; science should be the subject of elementary teaching; art should be the subject of elementary teaching. Whatever is to enter into the higher stages of education is to have its seed planted there or it never will be planted. The true distinction, therefore, between disciplinary and non-disciplinary, is not a distinction between one set of studies begun early, and another set of studies begun late; one set of studies pursued for training, and another set of studies mastered for use: it is a distinction between the earlier and the later stages of all studies whatever. The child, as well as the man, is linguist, student of science, artist, philosopher, moralist, poet; though his philology, science, art, philosophy will be childish, not manly; germs and intuitions, not results of developed reason."

It is somewhat difficult to determine very definitely just what he professor means. Would not the drift of the quoted para-

graphs warrant the inference, that every school, from the primary upward, should be a university; "childish," it may be, but still a university in variety of studies, where every pupil should be carried along at once in all the branches that, combined, make the sum of "extant knowledge"? Do we not here find a grand educational paradox? In the schools of Germany, where scientific thought has done most for education, it seems to have been practically assumed, that great excellence in teaching is to be attained only by the employment of teachers severally devoted to a specialty, and who can bring to the teaching of it the culture harvested from many years of concentrated and laborious research; but our education is to be an "ignominious failure," unless it makes its subjects proficients in the cosmos of science and art. Without question, it is a delightful vision, that of the good time coming, when our ideal republic shall stand the spectacle of an admiring world, without spot or blemish or any such thing; every citizen, male or female, the perfect embodiment of "all extant knowledge." But the great majority of teachers who have had a very large experience in encountering the friction and inertia developed in dealing with average boys and girls, however eagerly they may turn their longing eyes towards the dawn of that golden day, are still very much afraid that they may die without the sight. If we only could be spared to catch one glimpse, how easy it would be to "wrap the drapery of our couch about us, and lie down to pleasant dreams"!

This brings us naturally to another problem.

Not only have music and drawing been made, within a few years, to take a more prominent place in our schools than ever before, making a new demand upon the time and effort of both teachers and pupils, but there is a decided tendency to increase this extra demand, by the introduction of new exercises. All this is the result of a laudable ambition to accomplish as much as possible during the years of school-life, which are too few and brief. But have not many teachers already felt constrained to ask, How much farther can this multiplication of studies be carried, without being confronted by the barrier of public opinion that a class of reformers is seeking to raise against studying out of school-hours? In some grammar schools, the classes

in the last year of preparation for the high school have less than one fifth of the school session to prepare the exercises of the other four fifths; and this small fraction is divided into fragments of unequal brevity. Does such a plan furnish conditions under which it is possible to develop in pupils habits of systematic and efficient study? The solution of this problem should furnish a simple and definite answer to the question, What is the plan of conducting our schools that will ensure a constantly increasing quantity and quality of attainment, with as constant a diminution of the expenditure of time and effort on the part of pupils?

Still another problem is brought sharply before American educators by the thoughtful, and apparently candid work, recently from the pen of Dr. Edward H. Clarke of Boston.

His "Sex in Education" sounds an alarm from the watch-tower of medical science and practice that will be pretty sure to make many parents timid about having their daughters taxed to the extent, or with the degree of regularity, that they must be when subjected to the regime that is none too severe for boys.

It must be confessed that the view which Dr. Clarke presents of the condition of American girls and women is not an agreeable one; and that the theory which he propounds in regard to the needed modification of our educational methods is such that our present and prospective plans for general education cannot be very conveniently adapted to it.

But if a man so eminent as he, with unusual opportunities for extended observation, has been driven to such a conclusion on a question that so vitally concerns the future of American life, he certainly merits the gratitude of all good men and women by what he has done. It is not the part of wisdom or of candor to refuse a fair hearing and thoughtful consideration to statements that seem to support a theory that we dislike to accept. Is it not for the common interest of parents, pupils, and educators that the best men in the medical profession should throw as much light as possible upon this subject?

If the case be as Dr. Clarke has represented it to be, would not a selfish view of the matter prompt physicians to withhold the facts, that the continuance of a vicious system might create

and perpetuate a profitable patronage? But, as philanthropists, we all have a common motive to seek the truth, and bring all our educational methods into harmony with it.

Is it not possible that the necessary relief may be secured by giving greater elasticity to our system, in the direction of a little increase of liberty to be absent from recitation, while we hold firmly to a high standard of attainment; proof of such attainment to be furnished by passing a thorough examination at stated times, occurring at no long intervals, upon definitely assigned work?

Does not the proper settlement of some of these questions require a conference between able representatives of the medical and teaching professions? Hitherto, there has been little else than antagonism of views between teachers and doctors; because one class has regarded the other in the light of opponents. Is there not a more excellent way?

There never has been a time in the history of education when so many questions of vital importance were pressing for solution upon educators as just now.

Many an article dashed off by an editorial pen, without reflection, and received by thousands who read the daily paper more assiduously than they do their Bible,— and believe in it not less, — has tended to create extravagant expectations of the results attainable in the public schools; while like influences have discouraged any demand for increased effort on the part of pupils,— the primary condition of the possibility of the realization of such expectations. This state of the public mind has had its effect upon school committees. Some are seeking a remedy in a modification of the course of study; but, where theories are not limited by knowledge of the practical working, there is room for wide difference of opinion. One result of this is, that to-day the question, What is a proper course of study for the high school? is an unsettled one in many towns and cities.

Such a condition of educational matters should awaken educators to unusual earnestness, and incline them to united conference, for the purpose of reaching agreement on points of such vital importance, that without harmony of action upon them the work of our schools must be to a large degree desultory, and the

labor expended in them be wasted effort, — work not to be depended upon for definite and desired results. The presidents and professors in our colleges should unite with the teachers of the public schools in a common effort to reach the wisest conclusions in regard to all these questions at issue. An excellent opportunity for such a union of effort is offered by the State Association of High School and Classical Teachers. Those who have attended the meetings of this organization know how valuable they have been, and especially because educators in colleges, and those in the preparatory schools, have thus met, and have been ready, in the best spirit, to compare notes, and seek for the best mode of removing existing difficulties. We need a great deal more of such consultation.

DISTRICT SUPERVISION.

THE prudent and efficient management of the educational affairs of our larger towns has come to demand so much time, intelligent care, and professional skill, that the most competent men on boards of school committees readily see that the attendant duties are so large, and are of such a nature, that their proper discharge is incompatible with a business or profession that absorbs nearly all the time, thought, and energy at one's disposal.

A man who has so small a comprehension of the subject as not to see this is wanting in essential qualifications for the office. The recognition of these facts has led to the creation of the office of Superintendent of Schools, — an office which is honorably and usefully filled in many of our cities and larger towns by educators of large ability and experience.

When the true province of a superintendent comes to be thoroughly understood by the people, the committees, and the officials themselves, the office will be productive of even much greater good than it now is. He should not be burdened with such a budget of petty details — the kitchen-work of the school department — as to consume his time, and give no opportunity for the exercise of those powers and qualities that constitute special fitness for the office.

Neither should he, any more than the committee, whose servant he nominally is, take special pains to make painfully prominent his official superiority over those who may be his peers in age, experience, and professional ability. Between the teachers and himself there is need of the most cordial co-operation, — a condition that more naturally springs from considerate, sympathetic, and appreciative treatment, than from the most demonstrative exhibition of awe-inspiring authority.

But let there be combined in a superintendent good sense, a genial disposition, a quick appreciation of whatever is good and worthy of respect in a teacher, a clear and comprehensive philosophy of the mutual relation of age, capacity, method, and work to be accomplished, tact in arranging and bringing many to work in harmony to achieve a given end, and, finally, steady perseverance in working and waiting, — let all these qualities be duly combined in a superintendent, and he will be quite sure to return the equivalent of a good salary to the community that is so fortunate as to secure his services.

We have said thus much in approval of the good work that has been already accomplished. But school supervision is to-day practically unknown in those parts of our Commonwealth where there is the most urgent need of it.

In the cities and larger towns, teachers are usually employed who are quite as competent to direct all that pertains to the successful conduct of the schools over which they are placed as any whom the law may make their official superiors ; but, in the smaller towns, a very different state of things prevails.

To state the case very cautiously, there are many of these towns that have but few citizens competent to discharge the duties of school committee, and still fewer who are both competent and willing. This is not said in the spirit of disparagement, but is a simple recognition of facts for whose existence no one is blamed. Men can hardly be expected to have superior skill in matters to which they have never given attention. The schoolhouses are so distributed that the scholars to be taught in each range in number from six to twenty-five or thirty ; the sum of money raised for educational purposes is so small, that, when divided among the schools, it allows only enough meagrely to pay

a cheap teacher for pretending to keep a cheap school for the smallest number of weeks during the year that will meet the demands of the revised statutes. The candidates most likely to apply for such schools are those who have had little or no experience, and who are often, not without reason, timidly hopeful in regard to the success of their experiment. The result of an application is often decided by a very simple and convenient rule, "First come, first served."

The next scene will, quite likely, be a comedy or a farce. A teacher with limited education, less experience, and no more resources and self-reliance, left alone with her ten or twenty untutored boys and girls, soon finds herself at sea in a tub. Her energies are more likely to be expended for the purpose of keeping above water, than for the accomplishment of a very long voyage.

If the daily history of scores of schools that are furnishing the only facilities for education to future citizens of our State and nation could be faithfully daguerrotyped in the annual report, we should see something to humble our State pride, and awaken feelings of compassion for the poor victims.

Parents who send their children to such schools may be painfully aware of the state of demoralization that prevails, and yet feel that they are powerless to effect a reformation. The school committee alone have legal control in the premises; and the probabilities are, that they either do not know what to do, or, if they know, dare not do it: so the teacher is suffered to worry through the term, and is paid the pittance of the town's money for the endurance. What have the pupils to show in the way of mental and moral culture, knowledge, and skilful practice, or general preparation for the duties of citizenship? Yet, year after year the same farce is enacted, and so will continue to be, until some system is adopted that has enough method and vigor to reach and remedy the venerable methodless method.

If the more sparsely settled portions of the State could be divided into districts, severally embracing territory enough to furnish a reasonable field of work for an efficient educator, acting as superintendent and director of the schools within his district; if it should be made his duty to work for the largest practicable

centralization of scholars to see that no incompetent teachers are allowed to spoil the schools, and that the best methods and the best books are kept in use, we should soon witness a reform not second in importance to any of those upon which we have prided ourselves not a little.

We do not wish to be understood as intimating that all the schools in the small towns are poorly taught or badly governed. On the contrary, many of them are very fortunate in securing excellent teachers, the worth of whose services is very inadequately measured by the wages they receive. This, however, is not inconsistent with the truth of what has been said. If confirmatory testimony were desired, it could be readily furnished.

The imperative need of adopting a new mode of managing these schools arises from the abundant evidence furnished by experience, that the methods used hitherto are ill adapted to secure the desired result. The prevalent system does not involve forces adequately tending to ensure progress. If, by good fortune, something is gained one year, it is quite likely, by ill fortune, to be lost the next.

A healthful stimulus is given here and there by the institutes at which the teachers are assembled from several neighboring towns, and during three or four days are taught how to teach, by those who have had large experience, and are known to be practically successful in teaching. Some good doubtless results, too, from the occasional visits of an agent of the board of education; still such influences are too local and inconstant; too indefinite to produce the desired results.

Can the friends of education do better than to unite in asking wise legislation, that shall make provision for an efficient system of district supervision?

OUR PUBLIC SCHOOLS.

BY EDWARD H. RICE.

We feel a degree of pride in our public schools, and justly so; for they are a comfort at home, and a credit abroad. Yet it becomes us to consider candidly what defects may seem to exist, and what remedy may be at hand.

From France we can learn little of value; for perpetual revolutions, and the unfortunate interference of religious factions, have conspired to ruin any systems which may have been devised.

From England we can learn still less; for her common people are deplorably ignorant. The numerous monuments which adorn her public squares, and boastfully record the triumphs of English valor, are as meaningless to the average passer-by as the obelisks in the British Museum. The English scholars are, indeed, acute and profound; but education is an expensive luxury, which the utter lack of free schools has denied the common people.

To Germany, then, we must look, if we would obtain hints of practical value.

The admirable system which "Old Fritz" inaugurated, study and experience have perfected, till the Prussian schools have become a model for the world.

For so young a nation, we have made most remarkable progress; yet we may learn much from those who have studied longer and worked harder than we. The methods of education best fitted for our younger scholars are yet under debate; and we do not care to enter upon that branch of the discussion. We would rather confine ourselves to the older scholars in our grammar and high schools.

The teacher looks over his school: the faces are beaming with intelligence and thought; and yet how many of the pupils have given any serious consideration to the work of life, now drawing so near? Some are going to college; but this increase of advantages is too often only a shallow pretext for postponing all thought in regard to the future.

Much of this indecision is the fault of parents. The tastes and capabilities of the child are not canvassed at home; and he does not feel as if he were fitting himself for some definite, specific work in life.

The German child, on the other hand, sees three walks of life open before him. First, the trades, which offer support, indeed, but little more. Second, the learned professions, which offer honor, and perhaps abundant pecuniary compensation. Third, the army, which, to the private, holds out small inducements; but to the officer its promises and hopes are ample. The child's

decision is early made; and he then feels as if each day's work placed him nearer the object of his hopes. Our children, on the other hand, scarce know to what purpose all this study may be; and, when school days are over, so far from finding themselves ready to begin a work for which they are specially fitted, they find themselves, like Micawber, "waiting for something to turn up." The ladies are even more at a loss than the young gentlemen; for there are fewer occupations to which they can apply themselves. If they begin teaching, they do so only as a provisional employment, and, for this reason, they often fail most signally.

Again, very few of our schools are so conducted as to foster habits of persistent study or close application. The scholar studies forty minutes, then goes in to recite; then studies another forty minutes, then recites again. Thus the time passes, and his mind is perpetually diverted from one subject to another, his time is so atomized that he hardly knows what real application may be.

At home, indeed, the scholar *may* secure unbroken time for study. Yet in how many families is this golden possibility realized? As a rule, the time is even more broken up, and the attention more frequently distracted.

Most scholars, indeed, must study in the common sitting-room of the family, where the attention is divided between the work in hand and the general conversation in progress.

Nor is this all: numberless petty duties are required of the scholar which consume his time, and draw his mind away from the work before him. Special occasions of a public character aggravate the evil. Fairs, festivals, etc., tell their own story in the school-room, and do the scholar a great injury. But a worse evil is far too common. Scholars are frequently detained from school, to assist at home and in the store. On returning, they find that their classes have gone right on; and double work must be the consequence. This, the scholar cannot do, and do well; and his poor recitations have a demoralizing effect upon himself and on the school.

That these evils are serious no teacher can deny; that the remedy is easy, is equally evident. We may not be prepared to

make our school-houses simply a system of recitation-rooms, like the German gymnasia; but we may at least make the duties of school paramount to everything else. If a German father were to occupy his child's time and mind with outside work to the detriment of his studies, the school board would speak to him in a way he would understand.

We, on the other hand, esteem it a light thing to burden our children with numberless duties, and then with an inconsistency all our own, we complain that they do not make more rapid progress. As parents and teachers, it devolves upon us to talk with our children, till they feel they have some more definite object in life than the diploma they are to obtain. It belongs to us to assist them in forming habits of study and application, and to avoid so distracting the mind that such habits shall be impossible. And finally, we should hold the scholar's time as sacred to study. His school days will end soon enough, at best; and the various little duties of home or store will prove a poor substitute for the lessons which they replaced.

TEACHING PERCENTAGE AND INTEREST.

So large a portion of the arithmetic taught in our schools is covered by the principle involved in percentage, it being, at the same time, an exceedingly important and practical part, we should strive to adopt and practise the best method of teaching it.

There is reason to fear that the habits of working examples in interest, that are sometimes pretty firmly fastened upon pupils by the special drill of the school-room, would disqualify them for service in any position where even ordinary quickness of working is required. The trouble is often aggravated by the text-book used. There lies upon my table an arithmetic, but recently published, — one supposed to embody the latest improvements. Nearly one fourth of it is occupied by examples, rules, etc., of which the single underlying principle is that of percentage. I propose to call attention to a rule for computing interest, quoted from this book, not because the rule is any more faulty than similar rules that might be quoted from a dozen other arithme-

tics, but because the book is at hand, and will enable me conveniently to illustrate the point that I wish to make clear.

"To compute interest at 6%. Find the interest of $1 for the given time, by taking six times as many cents as there are years, one half as many cents as there are months, and one sixth as many mills as there are days; and then multiply the principal by the abstract decimal which corresponds to the interest of $1, thus found."

The sudden and unnatural turn taken by the final clause of this rule suggests what seems to me the viciousness of the entire rule.

The interest upon a sum of money for a specified time is simply a fractional part (usually expressed decimally) of that sum. The rate per cent, of course, denotes the number of hundredths of the principal to be allowed for the unit of time; this is generally one year.

Interest, then, differs from percentage only in this: in working examples under the latter head, the base is multiplied simply by the rate; while, under the former, the base or principal is multiplied by a fraction (decimal) composed of two factors, rate and time. In banking, discount, present worth, insurance, commission, profit and loss, no other principle is involved than we have found in percentage and interest.

If we teach the pupil to compute the interest upon $1, as the first step towards finding the interest upon another sum, logically the interest upon $1 for the given time is the multiplicand, and the number of dollars in the principal is the multiplier. But let us suppose that the principal is given in some other currency than United States money, *e. g.* English money. We shall see at once that the rule given is entirely inapplicable. Now, reverting to the principle already stated, the pupil will easily be made to see that at 6% the interest would be .06 of the principal for one year; .01 for two months; .005 for one month; and .001 for every six days, or one fifth of a month. If the pupil then be required to solve this example, — What is the interest at 6% of $48.25 for 3 years, 5 months, and 18 days? let him be taught that reckoning .06 for one year, .005 for one month, and .001 for every six days, he would have .18 for the 3 years, .025 for the 5

months, and .003 for the 18 days, or .208 of the principal for the given time. $48.25 × .208 = $10.036. Adherence to this simple principle through all the variations of percentage computations will relieve the pupil from considerable perplexity, and will make it easier to teach him how to take advantage of opportunities to abbreviate the work and come at results by short methods, for which no general rules can be given, but which mathematical tact will be constantly discovering, and that, too, with special delight, in the peculiarities of the given data.

Pupils will generally need some hints and illustrations to show them how to work independently.

If the rate be other than 6%, it will usually be more convenient to compute interest at 6%, and then add a fractional part of this interest to itself. For example, if the rate be 7%, add $\frac{1}{6}$ of the interest at 6%; if 8%, add $\frac{1}{3}$; if 9%, add $\frac{1}{2}$; if 5%, subtract $\frac{1}{6}$; if $4\frac{1}{2}$ %, subtract $\frac{1}{4}$, etc.

It might be well to show that the reason for the special facility of computing 6% interests depends upon the fact that 6 is a factor of 12, the number of months in the year, and also of 30, the number of days in a month.

Yet there are many cases when it would be better to depart widely from the methods given above. If the pupil were required to find the interest of any sum at 7%, for 4 years and 6 mos., it is evident that it would be proper to teach him, that if .07 of the principal were allowed for 1 year, for $4\frac{1}{2}$ years, $4\frac{1}{2}$ times .07, or .315, must be allowed.

Again, in computing interest at $7\frac{3}{10}$ %, we should not fail to note that this is, as it was specially intended to be, at the rate of two cents a day on $100, for every day in a year of 365 days. It will be an easy matter to show how this fact may be used to simplify and facilitate the computation.

So the peculiarity of the data connected with bank interest may properly occasion a special treatment. Suppose the pupil be required to compute the bank interest, or discount, on a note of $275, for 90 days and grace. He should see that for 60 days the interest is .01 of the principal, or $2.75; for 30 days, $\frac{1}{2}$ as much, or $1.375; for 3 days, $\frac{1}{10}$ of the latter sum, or $0.1375: total discount, $2.75 + $1.375 + $0.1375 = 4.26\frac{1}{4}$. It is evident that,

in working simply for the result, the process would occupy much less space than we have given it here.

If this article should seem to any unnecessary, on the ground that it contains nothing new, my apology is, that many pupils in our schools go through their arithmetic, and are then utterly ignorant of the principles and processes which have been here treated somewhat minutely.

ELEMENTS OF DESIRABLE SUPERVISION.

WHAT kind and degree of supervision is most serviceable to schools and teachers?

In attempting to answer this question, we reply, that supervision will be most serviceable to schools and teachers which is an unbiased supervision. There is a tendency among those who perform the duty of supervision to judge favorably or unfavorably of the teacher and her work simply from a personal like or dislike for the individual who teaches.

You need not go beyond western Massachusetts to hear severe criticism of a teacher who is doing faithful and conscientious work, because of a personal dislike for the teacher.

There are too many schools in our State which are superintended by those who recognize in the teacher nothing more than a hired servant, whose duty it is to please her employers; hence, if she be lacking in personal grace, though she have the mental and spiritual graces which fit her pre-eminently for the position which she fills, she is weighed in the balance, and found wanting. An unbiased supervision must recognize, as a fact, the principle that the physical peculiarities of the teacher, religious preferences, private beliefs, etc., so long as they do not affect her pupils injuriously, or tend to mar her influence as a teacher, are none of the supervisor's business.

Again, that supervision will be most serviceable to teachers and schools which recognizes the fact that teaching is a profession, and that he is best qualified to direct and prescribe, to whom the work of teaching is a matter both of experience and conscientious study. Our committees are too often constituted

of men whose time and thoughts are entirely engrossed in their own pursuits, — men who have not the leisure to understand, or the inclination to appreciate, the work of the school-room ; often of narrow minds, accustomed to the regular routine of business, wont to look at everything from a business standpoint. Such men are liable to consider a teacher successful, or otherwise, according as he fits his pupils to become accountants, clerks, or whatever, in their opinion, is the chief pursuit of man. Should the teacher, not valuing business success less, but good citizenship more, consider other tests the true criterion by which his work is to be measured, he is considered visionary and unpractical. Being deemed incapable of determining what his school requires, his wishes are unheeded ; nor is he consulted concerning matters of most vital importance to his school. He is hampered by unnecessary restrictions, embarrassed for the want of means properly to perform his work, and sees his golden opportunity slipping by unimproved, simply because those who are over him in authority cannot, or do not, appreciate his situation. Let the teacher see to it that he keeps himself in a condition favorable to right judgments, that his wants and opinions are reasonable ; and then let those to whom the supervision is intrusted act upon the supposition, that he knows more about his own necessities than any one else can know.

Again, that supervision will be most serviceable to school and teacher which bases its judgments upon an accurate knowledge of the facts in any matter concerning the school, and does not use the position as a stepping-stone to something higher, or as a means of accomplishing private ends.

Were it expedient to do so, illustrations might be given, taken from personal experience in western Massachusetts, in which the highest and most important position in the schools of the town has been offered or refused a candidate for considerations not even remotely connected with the good of the school. A candidate for the principalship of a high school, located just outside the Connecticut valley, was examined on this wise : " Are you a tenor singer ? Could you lead a choir ? To what church do you belong ? We thought we would secure a man capable and willing to fill such a position in our choir at the

same time that we obtained a teacher for our high school." The same man offering himself as a candidate for a grammar school, in a town not far from Springfield, was examined by a man, not a clergyman, as in the former case, whose name is somewhat known in Massachusetts political circles, on this wise: You are recommended by Mr. A. as being a ——, mentioning a certain religious denomination. You are a graduate from ——? Both questions being answered in the affirmative, the examiner said, This school has been in the hands of a ——; and we have decided to give you the appointment, believing that it is about time that a ——, mentioning the denomination to which he belonged, had the appointment.

Such supervision, though growing rapidly less, is even yet too prevalent in our smaller villages. Many a teacher could, were he disposed to do so, give from his own observation, if not from his own experience, cases in which the political preferment of the supervisors has outweighed every other consideration, in matters pertaining to the welfare of the schools. Comment on such supervision is unnecessary.

Without attempting to point out the particular duties of those whose business it is to supervise the schools of a town or city, one more qualification may be added in closing.

A supervision which gives dignity and authority to the schools and teachers may be of great service. A teacher who is brought into daily conta t with young persons soon becomes, in their estimation, somewhat of a humdrum personage, whose words fall upon dull ears, which heed but lightly the admonitions and counsels given. Let these words of the teacher be supplemented by occasional remarks from men who carry weight, and exercise a controlling influence in society, and they no longer pass unheeded. If the school supervision be intrusted to a man, or body of men, commanding the respect of the community, the last condition of excellence is attained; and there remains little more to be desired.

TO WHAT EXTENT SHALL LATIN BE A REQUIRED STUDY IN THE HIGH SCHOOL?

At the present time, when the relative value of classical and scientific studies is the object of such extended discussion in our colleges and academies, it is impossible that the question should not come up in some form in connection with our high schools. In fact any discussion which tends to introduce radical changes in the course of study of the higher institutions of learning must affect, in a greater or less degree, the lower, not only that they may meet the different demands made upon them, but also conform to a change in public sentiment.

It is not our present purpose, however, to consider the above question with reference to the relation between the high school and college, but only with regard to those who finish their education in the public schools, and who constitute the great majority.

In a country like our own, with vast resources to be developed and utilized, it is as natural as it is necessary that prominence should be given to those studies which bear most directly upon the great industries of the nation.

The consequent tendency is to discard classical studies in the public schools, except for those who are fitting for a collegiate course.

Ought Latin, then, to be a required study for those who finish their education with the high school? What part does it play in the education of the masses?

Of what possible use can the study of Latin be to the farmer, merchant, and mechanic, when in all probability they will never open a Latin book after graduation?

Would it not be much better to spend the time in pursuing those studies which they could apply immediately and practically to business? Such inquiries as these are often heard; and, if mere *utility* is the end of education, they are not made without reason.

If that only is to be learned which can be coined into dollars and cents in the shortest possible time, it might be questioned whether a knowledge of Latin would meet this requirement. But if, on the other hand, the true end of education is intellec-

tual training, those studies which will best secure this end, by expanding the mental powers and by qualifying for philosophical and comprehensive views, should enter largely into the high-school course.

That the study of the languages alone would secure this broad development, no one would be bigoted enough to assert. A combination of studies, embracing both classical and scientific subjects, is necessary to produce the finished scholar.

It is not, however, without reason that many, especially those who have no knowledge of the languages, are led to consider that the time devoted to their study in our high schools could be better employed on other subjects.

The failure which often attends the study of the classics may be easily accounted for on several grounds. We have reason to believe, first, that there is rarely a just apprehension of the *kind* of work to be done. Most scholars, and many teachers, are satisfied with the mere verbal translation of an author, and entirely overlook the most valuable elements of the study, — the roots, primary and derivative meanings, the laws of formation, the relations of thought indicated by the cases, moods, tenses, and the arrangement of words ; in short, everything which is necessary to an accurate translation of the *thought*. As a result, the rendering is crude and inaccurate ; the English is warped and twisted to fit the Latin idiom ; and that which should be the highest result of classical study — facility, accuracy, and elegance in the use of the "mother tongue" — utterly fails of accomplishment.

The study which, rightly entered upon, and kept up, would strengthen the mind, enlarge the judgment, and correct the taste, is too often set aside prematurely in disgust.

Another reason why classical studies fail to produce their legitimate results, is the prevalent habit of going over too much ground in a given time.

The study of any language, especially at the outset, requires that the most careful attention be paid to minute details, in order that a sure foundation may be laid for future progress.

The temptation to be superficial is very great, particularly with those who are fitting for college, as they often wholly over-

look the fact that the benefit to be derived from a college course is, as a rule, exactly in proportion to the fitness for it. It is only by a slow and thorough method at the outset, having each step thoroughly plain and familiar before passing on to the next, that a healthy interest can be maintained or true progress secured. There would then be none of that vagueness and mistiness that often surrounds the study of the classics, and causes them to be blamed for what is only due to a hasty, confused, and ill-directed manner of studying them.

A third and more important cause of failure is the want of properly qualified teachers. To be a successful teacher of the classics requires not only the most complete acquaintance with all the details of the study, but also a large experience in the best methods of training classes.

The age at which scholars usually begin to study the languages is not favorable for patient investigation and application. They need to be guided at every step, that mistakes may be avoided, and correct habits of study may be formed. It is a wise plan of some of our schools, which places the beginners under the oldest and most experienced teachers.

Other causes of failure might be enumerated; but those that have been mentioned, so far from condemning the study of the languages, only prove that, under proper conditions, they form a highly important and indispensable means of education, and ought to form a part of the curriculum of our high schools.

The question as to how long Latin should be a required study in the high school depends on the merits of the study and the end to be secured. That the study richly merits a place in the public schools, no fair-minded person will deny; and, to secure the best results, it should not, when once undertaken, be hastily set aside. It is our belief that no less time than two years should be given to it. More would be better; but, rightly pursued, and skilfully taught, it would in that time do much towards creating and fixing habits of close thinking and patient investigation, to say nothing of the direct tendency it would have to elevate the prevailingly low standard of literary excellence in the community at large.

X.

Resident Editor's Department.

AN EXERCISE IN ENGLISH LITERATURE.

"Your mind is tossing on the ocean,
There, where your argosies with portly sail, —
Like signiors and rich burghers of the flood,
Or, as it were, the pageants of the sea, —
Do overpeer the petty traffickers,
That curtsy to them, do them reverence,
As they fly by them with their woven wings."

Merchant of Venice.

Teacher. I wish to know, scholars, how many of you are pleased with Salarino's description of that sea on which he thinks Antonio's mind is tossing. Let me caution you, however, not to praise the scene because it is Shakespeare that paints it. You may be tempted to do so, because you think it safe and proper to praise any work from the hand of so great a master; in short, because you reverence the authorities. Possibly you may suspect that a confession of indifference will prove more damaging to your own than Shakespeare's fame. Or, perhaps, you may think that you are now expected to give your tribute of praise, and, in the kindness of your hearts, you may not wish to disappoint by declining. Praise from such motives is not genuine. If, as you read the passage, you feel a thrill of pleasure, however slight, you will so report it; if nothing of the kind, report with equal frankness. (The opinions of the class are taken.) I observe that some of you are more or less pleased, some are indifferent, while not a few, if I can read your faces, find it hard to decide what your real feelings are. Now why these degrees of feeling? They measure your enjoyment of the description. A complete answer is too much for us to attempt. A partial one, I think, will prove rich enough to pay for working it out. Let us seek for it. Suppose yourselves painters about to illustrate the passage. As I read it, will you picture it as vividly as possible? Remember what you put into your pictures, and why you put it there. If you will close your eyes, 't will aid you in your mental art. All ready. (The

passage is read.) You may now suppose your pictures varnished and framed. It is too late for any changes. Will the first pupil tell me about his picture? For the sake of definiteness, let us find out what kind of a sea he has. Is it smooth or rough, near land or with no land in sight, green or blue, light or dark?

Pupil. In the foreground I have a sandy beach. From it I look out on the open sea. It is not very rough.

T. Tell us more definitely about the surface,—the waves, for instance.

P. Well, there are breakers on the beach, with more or less foam and commotion there, but off where the vessels are, I have no roughness to speak of.

T. Is your sea under a clear sky, or are there clouds above? If the latter, how do they look? Is your scene a morning, noonday, or evening one?

P. I only know that my scene is a bright one. The sun is reflected in the water. I didn't think of clouds at all.

T. Have you ever seen anything like your sea and breakers and beach?

P. Yes, sir. I think I have put Nantasket Beach into my picture. I have often seen breakers like those I have mentioned.

T. Will the next please tell about his picture?

P. I have a sea rough with waves. They have white crests, and the spray is blown away from them at times. I call the sea *choppy* one. Then there are white, fleecy clouds above, and on one side an island with a lighthouse.

T. Where did you get your idea of a *choppy* sea?

P. I got it while sailing in the harbor. That 's what the skipper called the water.

T. Does your lighthouse resemble any that you have seen?

P. It looks very much like Minot's Ledge; and yet it is high up on a rock or knoll. I imagined an island, and when I put my lighthouse on it, I could n't help thinking of Minot's Ledge.

T. So far as you can tell, scholars, have you all pictured land and sea like those described?

P. No, sir.

T. Will the next pupil tell me about his argosies? Are they

large or small, few or numerous, modern or ancient? Tell about their masts, sails, color, and crew.

P. My argosies are ships, — a fleet of them, under full sail, a little inclined because the wind blows fresh.

T. Do they look like vessels you have seen?

P. Yes, sir, very much like vessels down at the wharves.

T. What kind of argosies has the next?

P. Mine are short and fat, with two masts, and large sails swelling out. The bows and stern are built up very high. There are guns on board to keep off pirates.

T. Not very modern vessels, I think. What gave you your idea?

P. O, I 've read about old Spanish galleons, and seen pictures of them. I don't remember much about them, to be sure, but they helped me.

T. How many of you have flags flying from your argosies? Not many, it seems. You may now take the liberty of hoisting colors in your pictures. The next will please describe her flags.

P. My flags are American. I know they are not right, but I could n't think of any other in the time given me.

T. Never mind what they are; at least, for the present. Try to think, however, why you selected them. What says the next?

P. Mine are streamers, red, blue, orange, and other colors; but each streamer of the same color throughout. I could only think of American, French, and English flags, and I knew those would n't do. Streamers can make argosies look gay like pageants, can they not?

T. Certainly. Your idea is an ingenious one. Has any pupil something new to suggest for colors?

P. Mine have a yellow background with a black dragon on it.

T. A strange flag, truly. How do you account for it?

P. Well, I made it up. I had to do it. I 'm sure I know nothing about old Venetian colors, and would n't it be absurd to have modern ones? Then, too, I've seen a lion or dragon in some Venetian picture, and I thought the animal might do for a Venetian flag as well. I used black and yellow, because they make a rich combination.

T. Ah, you 've been thinking of the lion of St. Mark, which

surmounts a column of red granite in a Venetian square. But enough about picturing flags. I don't know what the ensign of old Venice was; I presume you don't know. Can either you or I picture it?

P. No, sir.

T. True; the best we can do is to imagine something becoming to an argosy of those old times, and save the subject, if we choose, for investigation. How many of you have detected an increase of pleasure since picturing the passage? Yes, you begin to think better of this bit of word painting already. I feel so sure, however, that your pleasure still widely varies, as at first, that I will not question you to find out. Now the question with which we started. Why does our pleasure vary as we read such descriptions?

P. Is n't it because many of us don't *see* what is described? No picture, no pleasure, I think.

T. Yes, that is one reason. We read thoughtlessly. The gems are not seen. In literature, as in natural history, we must observe. How can we admire what we don't see? But there is another reason why our pleasure varies. Our talk has revealed it.

P. Those of us who do observe don't observe alike. We don't form the same pictures. I don't see how we can. Unlike pictures, unlike pleasures, I say.

T. Yes, but will some one tell why the pictures were not alike?

P. I think the pictures to-day are pretty closely connected with what we have ourselves seen and read and talked about.

T. That is true. The pictures we mentally paint must be reproductions of what has somehow come within our experience. The more and better one observes, the wider and more thoughtful his conversation and reading; and the better he attends to the descriptions before him, the more appropriate and vivid his mental pictures will become, and the greater the pleasure they will give. I have sometimes wondered what sort of a picture a Pacific Islander — one who had never seen or heard of anything outside of his savage sphere — would get out of Salarino's description, should an interpretation be attempted. His ocean might not be less beautiful than ours, but his coast lands would be coral shores, and his trees palms instead of oaks or pines, while his argo-

sies would be proas with triangular sails, scudding the waters with the state of tattooed chiefs. How difficult it must be to translate Shakespeare for a savage. Translators of the Bible are often put to severe tests in their attempts to convey ideas of unfamiliar things. It is said of the old masters that, whatever the nationality of their characters, the Dutch usually painted them Dutch, while the Italians made them Italian. Many curious and suggestive facts of the same sort may be mentioned. They illustrate the thoughts we have been trying to develop to-day: 1. Mental pictures based on the same description vary. 2. One reason why they vary is that the materials of which they are formed are as widely different as the observation and experience of those who collect the materials. F. A. H.

NOTE. — The writer of this article has occasionally given an exercise like this in the class-room. He is aware that it is an exercise in mental philosophy as well as in English literature, but that makes it the more valuable. It is slightly idealized. It will be difficult to confine wide-awake boys and girls to one line of thought. Pupils picture with great readiness. When they describe their pictures, their tongues are unloosed; they have something to say. A comparatively easy principle is settled here, but it is usually a revelation to young people that cannot well be made in any other way. This one settled, try another topic like the following: "Given similar materials, are people likely to form similar pictures? If not, then why not?"

Thus the imaginative power becomes a subject of study, and another reason is given why pupils don't picture Salarino's description alike. Again: "If the beauty and force of our pictures depend upon the materials used and our skill in combining them, to what credit is Shakespeare entitled?" And so on.

These exercises are based on the idea that literature *itself* should be studied before its history, and that, while there is much in its beauty or deformity, its power or weakness, which it is difficult to appreciate, and much more to define, there are yet topics of study, numerous and definite enough to awaken interest in the young, promote their culture, and help them in criticism. Many of them may be put into the way that leads to that higher plane of art on which it begins to be revealed why Milton, Shakespeare, and such men are great and belong to all time, while the multitudes are small and belong only to the present.

PICTURES IN TEACHING NATURAL HISTORY.

CAN pictures be used to advantage in teaching the elements of natural history?

This question has been the theme of two articles in the "Teacher," each containing many valuable suggestions, though differing entirely in the conclusion.

It seems to us that there is a misunderstanding with regard to the use of pictures. It is not claimed that pictures are *all* that is needed, but that they may become essential aids as "cards of introduction to nature's school-room."

The exception taken to this phrase in one of the articles referred to, "that nature does not stand upon etiquette," we think hardly fair, as it interprets "introduction" in a specific sense not warranted by the context. Its ordinary meaning (which is also in accordance with its etymology) seems to us to express exactly what the author evidently intended, and what we think is defensible.

At any rate, that is the real question at issue, and upon its decision must depend the answer we give to the question with which we began.

Can a teacher, by the use of pictures like those of Prang & Co., aid pupils in recognizing the peculiarities and *essential characteristics* of different classes? Can he awaken an interest in the subject, and assist them in forming accurate habits of observation, by directing their attention to these characteristics when they see the *thing* itself?

That, we take it, is all that is really claimed for them; and that, we think, constitutes such an "introduction" to natural history as will be, in itself, valuable, and lead pupils, in many instances, to pursue the subject further.

It seems to us that a child who has had the training which these pictures are designed to give, will, when he sees the animal or plant, be more likely to observe accurately and intelligently than one whose attention has not been directed to *characteristic* marks which serve as a basis of classification. The plan of instruction, for which we are indebted to Prof. Calkins, we think eminently adapted to render the pictures available as means of illustrating some of the more important distinctions in different classes.

We think Prof. Agassiz admits all that is claimed for them, when he says that "the text" [as prepared by Prof. Calkins] "may be made the basis for substantial instruction, in connection with the plates." "Of course," he says, "such means can never take the place of natural specimens; but, where books must be used, I have no hesitation in recommending yours."

We presume he would have used similiar language with reference to Guyot's Physical Geography; and we know of no one who would object to books, plates, and maps in teaching this science.

A COURSE OF DRAWING FOR PUBLIC SCHOOLS,

PREPARED BY PROF. WALTER SMITH,

State Director of Art Education for Massachusetts, and General Supervisor of Drawing in Boston Public Schools.

ANY course of drawing pursued in the public schools should give two results, the one educational, the other practical. Hitherto it has not been very clear that either of these results was secured by the drawing in American schools; hence, when taught at all, drawing has been little more than a tolerated study. But now that educators and practical men begin to realize its full scope, its bearings upon culture and industry, when it is properly taught, both demand that it be made an obligatory study in all public schools, from the lowest to the highest. They demand, however, that the method of instruction be changed.

Leaving the past behind her, Massachusetts is now making a noble effort to give her whole people a broad, practical art education, of which drawing must always constitute the basis. By reason of steam carriage and telegraphic communication she finds herself compelled to struggle with European competitors for the control of even her home market; and so she is resolved that her laboring classes shall be as well educated, technically, as are the laboring classes of Europe. The same influences which have aroused Massachusetts, are felt in all parts of the country, and must, soon or late, lead to the same result — the popularizing of art education.

It will be well, in this connection, to describe, briefly, what Massachusetts has done and is doing — to describe the general character of the art and artisan instruction which is, even now, largely given throughout the State.

In 1870 the Legislature of Massachusetts passed a law which made instruction in drawing obligatory in all the public schools of the State, and also required every city and town having ten thousand inhabitants to maintain a free drawing school for adults. To give practical effect to this law, to start right and continue right, it was necessary for some person, fully competent, to have the general direction. Satisfied that there was no one in this country fitted for this responsible duty, the State Board of Education secured the services of Walter Smith, of Leeds, England. The city of Boston uniting with the State in paying the expenses, Mr. Smith was made "State Director of Art Education," and "Supervisor of Drawing for the Schools of Boston." This double office required that he should introduce a course of art study into the schools of Boston, under his immediate supervision, and that he should give general direction to art study throughout the State.

For twenty years Mr. Smith had been engaged, as a teacher, in promoting the art education of his countrymen. At the time he was called to Massachusetts, he was master of three schools of art. He was also at the head of one of the only two normal training schools for art masters. The other is the celebrated South Kensington Museum. Mr. Smith was in the direct line of promotion, and had good reason to expect that, if he remained at home, he might ultimately become master of South Kensington itself. This would be the highest honor of the kind which his country could bestow. When, therefore, Massachusetts, following the advice of the art and science department of the British government, proposed to Mr. Smith that he should come to this country, there was little expectation that he would consent. Why did he, then? Solely because here was a vast uncultivated field in whose soil he could plant, according to his own mind, the seeds of a popular art education, which would spring up and bear abundant fruit for years to come.

Fully comprehending what is meant by art education, Mr. Smith saw, from the very beginning, the end to be attained, and all the intermediate steps to that end. First, there must be a course of study systematic and logically progressive; and it must be sufficiently comprehensive to meet at least the general wants of the different industries. The gradation of subjects must be made with care, and sufficient practice given to each, while related subjects, which assist each other, must be taught simultaneously. Second, the instruc-

tion, so far as the public schools are concerned, must be given almost wholly by the regular teachers — wholly by them in the lower schools. Third, there must be suitable books, suitable both for teachers and for pupils; also models, casts, etc., without which good instruction is impossible.

A graded course of drawing for the Boston schools was laid out. In order to prepare the teachers, Mr. Smith gave them lessons, and still continues the lessons, as all the subjects have not yet been completed. He has visited the schools from time to time, observed the work there done, and thus made certain that his general directions are followed. But he himself has not taught in the schools. Assistants, visiting the schools more frequently, have attended to the details of instruction. Mr. Smith has seen that all the pupils were examined for promotion in drawing, as in other studies, and that public exhibitions were held, showing the work done not only in the common schools of Boston, but in the evening schools throughout the State. He determined the general character of the evening drawing schools for adults in the city, and has superintended the instruction given in them. He has also aided in the organization of similar evening schools in different parts of the State, and given many public addresses. He has rendered great service to a large number of towns that have called upon him for help. The Normal Schools have received his personal attention, and he has worked in many Teachers' Institutes. He has had suitable drawing models made for the different grades of schools; he has prepared four large volumes of drawing copies for advanced instruction; he has delivered two courses of lectures (twelve each) before the Lowell Institute; he has published a work on "American Art Education"; he has made a series of drawing-books for public schools; and he has just launched, successfully, the Massachusetts Normal School of Art. This, however, is by no means a complete catalogue of Mr. Smith's labors since he came to this country.

It is now clear enough, from the results already achieved, that Mr. Smith was master of his business, and not a mere experimenter. Being sure of his ground, he went boldly forward. The general scope and progressive character of the work he is doing was seen at the State exhibition of Drawings which was held in Horticultural Hall, Boston, in May last. There were some 20,000 drawings from the Boston schools alone, showing the work of all the classes, from the primary schools to the high and special schools. The illustrated report on drawing, recently published by the school committee of Boston, also gives on a small scale a like general view of what has been accomplished. Now that Mr. Smith's drawing-books have been published and put into the schools, there is no doubt that the next exhibition of drawings will show a decided advance upon the last, with diminished labor on the part of the teachers.

It is true, Mr. Smith alone could not have accomplished what we already see; he has had the hearty co-operation of both public officials and private citizens. But they have co-operated with him in carrying out *his* views. So, when we speak of what he has done, we but describe, in a general way, the course of art education in Massachusetts during the past three years. As

this education must elevate wonderfully all the industries in which our people are engaged, it is safe to say that Mr. Smith's labors will, in the end, add untold millions to the wealth of the State.

We will now consider the character of the course of drawing which Mr. Smith has proposed for public schools, as that is the department of art instruction in which people are more especially interested at this time. From an address which he delivered before the American Institute of Instruction last year, we make the following extract: —

"Now that drawing is being taken up in earnest in this country, it is a matter of some consequence that we should begin right, and, rejecting those methods of teaching it which have failed elsewhere, adopt some rational system that is simple enough to be easily understood by all teachers, and by which all children may learn without difficulty

"It seems to me fair to proceed on the hypothesis, that, whatever children may be expected to learn, teachers may be expected to learn and to teach. By practical experiments on large classes throughout entire schools and cities, it has been demonstrated that physical or mental incapacity is the only obstacle which prevents children from learning to draw; and the capacity of teachers both to learn drawing and to teach it is thus proved beyond all question, being both physically and mentally capable.

"To succeed in drawing requires the cultivation, in a particular direction, of the understanding and the taste, and development of manual skill.

"In this process the adult has immense advantages over the child in that half of the faculty which is based on the understanding; and is at a disadvantage, comparatively, in all that depends upon manual dexterity, with the child. They are, therefore, about equally capable of learning, so far as capacity goes; and with both it is a question of willingness and diligence whether they shall draw well or badly.

"The matter of executive or manual skill need not trouble us much, unless we have arrived at such extreme old age that our senses are failing us, and our tendons are becoming bony. Our hands will no more refuse to express what the eye sees and the mind understands, than they will refuse to handle a knife and fork at dinner-time, — a catastrophe which does not frequently occur.

"That is a mere question of training; and the hand will always train faster than the mind. I sometimes hear this sort of statement from adults whom I am teaching: 'I know and see exactly how it ought to be; but I cannot do it.' Now, we may take it for granted that any part of a drawing which depends on manual power will be equal to the knowledge displayed; and therefore a remark such as I have quoted is usually an unconscious misrepresentation of the facts.

"For, to pursue the conversation, I shall say, 'Your lines are good enough for all practical purposes: but why reverse their positions? The broadest part of this vase is near the top, and you have made it broadest at the bottom.' The answer will probably be, 'Why, so it is! now, I had not noticed that before.' Which means that the poor hand had had nothing to do with the mistake. The eye had been accustomed to look, but not trained to see; and the understanding, which should have been leading the van, was far away in the rear; the general complaining that the battle was lost 'because of the inefficiency of that confoun led little drummer-boy.'

"The first thing to do in the teaching of drawing is so to arrange its exercises that they shall all be comparatively easy, and each be a preparation for the next. That brings us to the question of grading; what the children in each grade of school are able to do, and how it can be made a consistent part of a general plan, having definite objects to obtain, requiring nothing to be

unlearned as the student progresses, and leaving nothing unlearned that may be necessary for his advancement.

"I take it that the object of teaching drawing primarily is, that every person shall have accurate ideas on all matters involving a knowledge of form or color, and be able to express them by drawing the shapes of objects, or their tints, as readily as he can give their names, or distinguish one from another; secondly, that this power may be so generally acquired, that all trades, occupations, or professions, which, to succeed in, necessitate the ability to draw, shall be prepared for at school by every one, either to practise or to understand, just as learning to read and write prepares all of us for our elementary duties and callings, whatever they may be, so far as reading and writing are concerned; that we know enough of them to make all that depends upon them possible to us, if we are capable of attaining it.

"There are three ways of looking at the subject of drawing, — 1st, as a language; 2d, as an art; 3d, as a science.

"In the primary and grammar schools, drawing is to be regarded as a language for the expression of form with accuracy; and its acquisition should be as much a matter of method or a matter of course as learning a written or spoken language, and by a very similar process.

"Drawing has, for instance, its alphabet, — the straight line and the curve, — varieties and combinations of which compose the vowels and consonants of the language. Then it has its grammar, which controls, or rather explains, the art of representation; true drawing being in art precisely the same thing as grammatical expression in language.

"In the high schools, after a good foundation has been laid in the primary and grammar schools, the pupils may arrive at the practice of drawing as an art, in its most elementary stages; though it will be some time before sufficiently systematic training has been secured in the lower schools to make art-work possible in the high schools.

"We may, therefore, consider that the educational aspect of the subject of drawing in the graded public schools is that of a language, the speech of the eye expressed by the hand; and the experience we have in teaching a language will not only indicate to us what to teach, but how to teach drawing.

"If we wished to convey the idea of a square to another person, we must either pronounce the name, write the word, or draw the form.

"In each case we use our senses as a medium of interpretation; the spoken name appealing through the ear and memory, the written word through the eye and memory, the drawing through the eye alone, direct to the understanding.

"What is true of this symbol is true of all degrees of complexity in drawing, until we arrive at works of the imagination, so that the parallelism between drawing and language is direct enough to guide us in codifying the exercises of the former upon our experience in the latter."

As to the capacity of people, in general, to learn drawing, Mr. Smith speaks thus forcibly in his book entitled "American Art Education": —

"There are but four classes of human beings whom it is not found practicable to instruct in drawing. They are the blind, the idiotic, the lunatic, and the paralytic. Of the rest of mankind and womankind, exactly a hundred per cent can be taught to draw. The only real difficulty in teaching drawing to adults is found in the settled conviction in some people's minds, that they are incapable of learning. It is the only fatal hinderance; for, until that is removed, little progress can be made."

By this, we take it, Mr. Smith means that, just as all can learn arithmetic, though all cannot become distinguished mathematicians, so all can learn to

draw, though all cannot become distinguished artists. There are degrees of attainment in all things.

In his book on "American Art Education," Mr. Smith further says: —

"The ability to represent the forms of all objects with accuracy and readiness must inevitably result from including drawing in the education of every child; and that is a very useful power to all. What we want is, that all kinds of elementary drawing shall be taught as a language, not as an art, and be used as an instrument, not as a plaything. Drawing treated as a language is a criticism made by ourselves upon our own knowledge, in which we either discover the depths of our ignorance, or express intelligibly the knowledge and ideas we have. Especially will drawing be found a ready handmaid to scientific study, illustrating its axioms, recording its phenomena, and explaining its laws. In the school-room, the danger is strenuously to be guarded against of allowing drawing to be practised for the mere purpose of producing pretty things. It should be regarded as a servant, or vehicle, to assist expression in the study of other subjects, as it is in geography, by means of map-drawing. Thus, I would not teach a class the art of flower-drawing as an accomplishment, but give it lessons in botany, and require the illustrations to be drawn to fix the principles of growth on the memory. By that means we should get accurate drawings, and the botanical knowledge would be an additional gain.

"In teaching drawing, from the very first, objectless and meaningless forms ought to be avoided as copies; for they make no appeal to other knowledge possessed by the pupil, or which can be communicated. Thus it is as easy to give a class information about the historical details of architecture, by selecting type-forms of the different periods as drawing copies, as to give mere exercises in drawing, embodying neither history nor architecture. Fitting subjects of study in drawing and painting may be thus adapted to all the school ages, beginning with the lowest class in the primary school and ending with graduation at the university: during all of which time the study is to be regarded as the means to an end, and not the end itself; the end being to see, to know, to remember, to reproduce, and finally to create: in other words, education. The time spent in practising drawing weekly need be no longer, and should not be shorter, than that given to other elementary subjects, such as reading, writing, and arithmetic; and great economy of time in after-life will be ensured by the possession of a means of expression as ready as the tongue and more descriptive than the pen.

"The use of drawing in the workshop and office needs but little demonstration; seeing that, without its skilful practice, many trades and manufactures and several professions cannot get on at all. And when we come to the practical business of every-day life in the shop, factory, and studio, we must substitute the more general word of art education, including drawing, painting, modelling, and designing, as the extent of art instruction required."

If we now examine Mr. Smith's drawing-books for public schools, published by James R. Osgood & Co., Boston, we shall then see what detailed application he makes of the general views expressed in the extracts which we have given.

The primary course begins with copies on cards for slate practice; but before it concludes, it introduces the pupil to drawing on paper. The pupil having obtained a knowledge of lines and of certain figures in plane geometry, he proceeds to exercises which teach form, proportion, and principles of practical design for textile fabrics, surface decoration, pottery, and so forth. He learns how principles of design are derived from leaves, flowers, and the

like. But all the work in the primary course is not confined to two dimensions. Some practice is given in object and model drawing, with an explanation of those principles of perspective which are easily understood by children. The Teachers' Manual, which goes with the primary course, not only describes all the drawings and principles of design, but gives full details as to the management of classes. Similar manuals, containing all the drawings placed in the hands of the pupils, and many others for dictation lessons, go with the other parts of the course.

In the primary course, but little attention is given to fine finish; great stress is laid upon a knowledge of form, principles, and rapid work.

Drawing from flat copies is continued in the grammar course, with more elaborate illustrations of the principles of practical design than are given in the primary course. The historical element in art receives marked attention. The pupil having acquired a good degree of skill in free-hand work, begins to draw, with instruments, those problems in plane geometry which are of such value to artisans. Free-hand and instrumental drawing alternate now, the former to be done with rapidity, the latter with the utmost care. A twofold discipline is thus secured, giving both quick and precise execution. The instruments required are few and inexpensive; but they are sufficient both for geometrical and perspective drawing.

Object and model drawing and perspective drawing with instruments also begin in the grammar school. The former, done free-hand, involves principles of perspective, and so alternates with the latter, which gives free-hand and instrumental practice at the same time. By the object and model drawing the imagination is developed, and the pupil taught to "see in space," as as it is termed, a power of great value to every one. As perspective is the representation of things as they appear, it lies at the foundation of the higher art culture.

The work is still based on geometry. The first objects and models represent artificial geometrical solids, and then follow natural objects which have marked geometrical features. Thus the pupil proceeds from the symmetrical to the unsymmetrical. Unless he can draw the former accurately, it is of little use for him to attempt the latter.

In the high school, the object and model and the perspective work is continued; but some provision is now made for special instruction. Those who expect to engage in any sort of building construction, as machinists, carpenters, masons, architects, take up mechanical projection and working-drawings. When thought best, this may be made an optional study, to a limited extent, in the grammar school, — to an extent that will enable the pupils at least to read a working-drawing, which so few workmen can do now. Others, having a more artistic taste, draw from the cast, ornament in relief, etc., — work which will tend to qualify them for artists or art workmen.

But a word must be said about certain things which specially distinguish Mr. Smith's course of drawing. It is based on geometry throughout. Greater importance is attached to a knowledge of principles than to mere mechanical execution, the object being to make originators, and not mere copyists. Thus

the text becomes a most essential feature. The symmetrical, which can be verified, is taken before the unsymmetrical, which cannot be verified. Hence, he does not begin with nature. The free-hand work is done rapidly, spirit and form taking precedence of purity of line. Dictation and memory exercises form an important feature. In the former, the pupil translates words, spoken by the teacher, into drawings; he must give the closest attention, must distinguish the exact force of language, and must first make a mental picture of what is required to be drawn. Hence comes important mental discipline. In the memory exercise, the pupil is required to reproduce something previously drawn, especially something of historical value. In this way the ability to remember form is cultivated, and the characteristic features of different styles of art are firmly fixed in the mind. Again: the drawings are all as beautiful as they can well be made. It is by looking at beautiful forms that the taste is developed. Much attention is paid to the historical element. The blackboard is used, mainly, for leading the class and explaining principles, not to provide the pupils with copies, as then each teacher would need to be an expert draughtsman, while only the few who sit directly in front of the drawing could see it properly; for all others the lines are distorted. The latter grave objection holds against the use of wall-charts, and so their use is forbidden in the best schools.

It is to be specially noted that Mr. Smith does nothing with light and shade in any of the earlier stages of drawing, and not much at any stage of the public-school course. Until form has been well mastered, time devoted to shading is worse than wasted, — it is positively vicious. The time spent in badly shading a single drawing is enough to enable the pupil to make a dozen drawings in beautiful outline. Previous to Mr. Smith's coming to this country, so much time was spent on shaded copies, that it was impossible to produce any results in the public schools that would be deemed satisfactory by competent judges. By this abolition of shading, time enough is saved for teaching design, geometrical drawing, and other important features.

Here we have five general departments of drawing in Mr. Smith's course, — flat outline, geometrical, object and model, perspective, mechanical projection. The books are intended to cover a course of eight or ten years, with two hours of instruction a week. As fine as the books are, the expense for each pupil, after leaving the primary school, is only from fifty to seventy-five cents a year, according to progress. Any one department can, of course, be taken by itself, though there is a logical connection between all.

GOOD *vs.* BAD EDUCATION. — "The essential difference between a good and a bad education is this, that the former draws on the child to learn by making it sweet to him; the latter drives the child to learn by making it sour to him if he does not. Yet how utterly has this plain and practical truth been ignored!"

LIBERAL EDUCATION OF THE NINETEENTH CENTURY.

[From a Lecture before the National Teachers' Association, by W. P. Atkinson.]

I RECKON five leading influences which are acting powerfully to modify all our old theories, and slowly working out a new ideal of liberal education: 1. A truer psychology, giving us for the first time a true theory of elementary teaching. 2. Progress in the science of philology, enabling us to assign their right position to the classical languages as elements in liberal culture, and giving us, in modern philological science, an improved and more powerful teaching instrument. 3. The first real attempt to combine republican ideas with the theory of liberal education — in other words, to make the education of the whole people liberal, instead of merely the education of certain privileged classes and protected professions. And when I say the whole people, I mean *men and women*. Nothing, I will say in passing, to my mind so marks us as still educational barbarians, so stamps all our boasted culture with illiberality, as an exclusion of the other sex from all share in its privileges. No education can be truly liberal which is not equally applicable to one sex as to the other. 4. As the influence more profoundly modifying our conceptions of liberal education than any other, I reckon the advent of modern physical science. 5. I count among those influences the growing perception that art and æsthetic culture are equally necessary as an element in all education worthy of the name. Let me give the few words, which are all the time will allow me, to each of these influences.

And, first, the advance we have been making towards a truer education-philosophy, based upon truer conceptions in regard to the growth and early development of the human mind, is pretty well disposing of what, perhaps, I may be permitted to call the old-fashioned grindstone-theory of elementary education; the doctrine, namely, that, as preparation for higher culture, all youthful minds require a certain preliminary process of sharpening upon certain studies, valueless or next to valueless in themselves, at least so far as regards the vast majority of their recipients; but quite as needful, nevertheless, to them as to all others who are hereafter to be considered as liberally educated, for the indirect benefit their pursuit was supposed to confer. The accepted theory of liberal education has heretofore been, that it was a certain very special kind of training which required this peculiar preliminary sharpening process, and that, as the instruments for it, there were certain almost divinely-appointed studies exclusively set apart, to wit, the grammars of two dead languages, and the elementary portions of abstract mathematics. It was not and could not be maintained that these studies would ever be the natural choice of the youthful mind in the beginning of its scholastic career; rather, it was thought to be a prime recommendation that they were as remote as possible from anything the youthful mind would of itself appropriate as intellectual nutriment. Like medicine, the value of such disciplinary studies was supposed to be in direct proportion to their disgustfulness; for they were not food to nourish the mind withal, but tonics, wherewith artificially to strengthen

it. They were rods for the spiritual part, the counterparts of those material ones which the strong right arm of the ancient pedagogue wielded with such efficiency on the bodies of his youthful charge, and the benefit of both alike was not utilitarian, but disciplinary.

That I may not be suspected of caricaturing, I will make a quotation from a lecture by Prof. Sellar, Professor of Greek in the University of Edinburgh: "The one extreme theory," he says,[1] "is that education is purely a discipline of the understanding; that the form of the subject is every thing, the content little or nothing. A severe study, such as classics or mathematics, is the thing wanted to train or brace the faculties; it does not matter whether it is in itself interesting or not. The student will find sufficient interest in the sense of power which he has to put forth in training for the great race with his competitors. 'It is not knowledge,' they say, 'but the exercise you are forced to incur in acquiring knowledge that we care about. Read and learn the classics simply for the discipline they afford to the understanding. You may, if it comes in your way and does not interfere with your training, combine a literary pleasure with this mode of study, but this is no part of your education. As teachers, we do not care to encourage it; we do not care to interpret for you the thought or feeling of your author. All such teaching is weak and rhetorical: we do not profess to examine into your capacity of receiving pleasure. Accurate and accomplished translation, effective composition in the style of the ancient authors, thorough grammatical and philological knowledge — these are our requirements. The training in exactness, in concentration, in logical habits, and in discernment of the niceties of expression, is the one thing with which we start you in life. Whether you have thought at all, or care to think about the questions which occupy and move the highest minds, is no affair of ours.'"

Here we have the very essence of what I have denominated the grindstone-theory. I think that a truer philosophy has exploded these fallacies, and well-nigh obliterated that artificial line of distinction between studies for use and studies for discipline. True education remains and must remain forever a discipline; but juster views in regard to the nature of the youthful mind are beginning to show us that that discipline is of the nature of a nutritive rather than a curative process, and that the disgust felt by the recipient for the means employed is no measure of their disciplinary value. We are discovering that the idea of discipline inheres, not in the nature of certain particular subjects, distinguishing them from all others which are non-disciplinary and merely utilitarian, but in the right method of teaching all subjects; and the question, whether at any particular period or stage of progress a subject is to be used for purposes of mental discipline, depends not at all upon the question whether it belongs to one or the other of two imaginary classes, the disciplinary and the non-disciplinary, but upon the quite different questions whether the study is valuable in itself, and whether it is suited to that particular stage of the pupil's mental progress. If so, and if rightly taught, it will then be sure to be the right discipline.

[1] "Theories of Classical Teaching: A Lecture," p. 10.

INTELLIGENCE.

PERSONAL. — Mr. Larkin Dunton is elected superintendent of the schools of Cambridge, at a salary of $4,000. He has been head-master of the Boston Normal School since its separation from the Girls' High School; previous to which he was master of the Lawrence School, South Boston. His unanimous election to a position of such importance is a high testimonial of his reputation as an educator.

Mr. Minot Warren, of Medford, has been elected principal of the High School in Waltham, a position which has been searching for the right man for some months.

Mr. C. G. Pope, principal of the Bunker Hill School, Charlestown, has resigned, for the purpose of entering the profession of law.

Mr. Samuel J. Bullock, sub-master in the Prescott School, Charlestown, has been elected principal of the Bunker Hill School, as successor of Mr. Pope.

Mr. W. E. J. Varney has been appointed teacher of the Centre Grammar School, West Bridgewater.

Prof. Moses T. Brown has been appointed teacher of elocution in the Boston schools, for six months, with a salary of $2,500.

J. B. Poole, Esq., of Stoughton, is elected sub-master in the English High School, Boston.

Ella M. Pattee, of Wakefield, has been elected assistant in the Peabody High School.

Mr. Alonzo Meserve, usher of the Bigelow School, South Boston, is appointed sub-master in the Prescott School, Charlestown.

Emily F. Fessenden, head-assistant in the Hancock School, Boston, for the past ten years, has resigned, because of failing health.

F. E. Sherman, of the Class of '73, at Amherst, is teaching the High School at Harvard, Mass.

C. N Clark, of the same class, is assistant teacher in the High School, Brimfield, Mass.

At a meeting of the graduates of Amherst, at Minneapolis, Sept. 25, we see by the report that some gentlemen, well known by the teaching fraternity in our State, were prominent. Among them were J. F. Claflin, Esq., who was among the most active at all teachers' gatherings while he was in Newton. Mr. Claflin is now successfully engaged in business at Lombard, Ill.

Rev. E. Douglass, late Superintendent of Schools in Woonsocket, R. I., is now United States Indian Agent at White Earth, Minn.

Miss Mary H. Leonard, second female assistant in the Bridgewater Normal School, sailed for Europe on the 24th of December. She will spend the winter in study in Germany, and the summer in travel, returning to her work in Bridgewater in about a year. Few teachers would carry with them the cordial goodwill of more pupil friends than Miss Leonard.

Rev. W. G. Nowell, of the Malden High School, has been elected as submaster in the English High School, Boston.

Mr. Fowle, sub-master of the Waltham High School, has resigned, because of ill-health, and is to travel South.

Mr. E. P. White is elected as Mr. Fowle's successor in the sub-mastership of the Waltham High School.

BOSTON. — Mr. Leonard, of Whittendon, and Mr. Seavey, of Saco, Me., are elected sub-masters of the English High

School. (For other appointments, see PERSONALS.)

Mr. David W. Foster succeeds Dr. Waterston on the Drawing Committee.

Miss L. M. Bean, teacher in the Lewis School, has resigned.

CAMBRIDGE. — Miss Humphreys, of the Washington Grammar School, has resigned.

Miss Annie E. Abrahams temporarily succeeds Miss H.

Letitia M. Dennis is appointed teacher in the Wyman School, at a salary of $500.

CHARLESTOWN. — Miss A. E. Somes is elected assistant teacher in the High School.

Miss Louisa T. Swan is elected teacher in the Warren School. (For further changes, see the PERSONALS.)

MALDEN. — Mr. G. A. Littlefield succeeds Mr. Weston in the Centre School. Mr. Littlefield formerly had charge of the West School, but resigned last spring and fitted for Harvard, which he entered as a '77 man.

Mr. W. A. Wilde, formerly Superintendent of Schools in this town, has returned a second time from Europe, where he visited many of the art schools. He has offered to give to the town a set of models for each of the four Grammar schools, thirty pieces in each set, for the purposes of drawing.

Mr. O. B. Brown, leader of the Choral Union in Malden, has been appointed Director of Music in the public schools, and has already begun his labors, succeeding L. W. Mason, Esq., of Boston.

Two unfinished rooms in the Maplewood school-house are to be finished at once, and one of them furnished for use in the spring, in order to meet the demands of this rapidly-growing part of the town.

A new school-house, with two rooms, has recently been erected in that part of Malden called Lincoln, which will soon be ready for occupancy, it is thought.

Mr. W. A. Nowell, formerly master of the Malden High School, has begun his labors in the English High School, Boston.

HOLYOKE. — G. W. Edwards, Prin. of the High School, has resigned.

Chas. S. Hemingway, a graduate of Yale, and recently Prin. of the High School at Bloomfield, N. J., has been elected to fill the vacancy.

CHELSEA. — The School Committee of Chelsea are now ready to appoint a Superintendent of Schools. Applications, *in writing*, with references and testimonials, may be addressed to C. A. Richardson, No. 1 Somerset Street, Boston.

NATIONAL EDUCATIONAL ASSOCIATION.

The Fourteenth Annual Meeting of the National Educational Association will be held in Detroit, Michigan, on the 4th, 5th and 6th days of August, 1874. The Governor of the State, the Mayor of the City, the State and City Superintendents of Public Instruction, and the Board of Education of the City of Detroit, have extended a very cordial invitation to the Association to meet in that place. Free use of assembly halls has been proffered, and every effort will be made to secure a successful and profitable meeting. Announcements concerning programme, facilities for travel, hotel accommodations, etc., will be made in due season.

A. P. MARBLE, *Secretary.* S. H. WHITE, *President.*

Books.

THE FRANKLIN READER: First, Second, Third, Fourth, and Fifth Parts. By Geo. S. Hillard and L. J. Campbell. Published by Brewer & Tileston.

The First, Second, and Third Parts of this Series have been prepared by Messrs. Hillard & Campbell; the Fourth and Fifth by Mr. Hillard alone.

The Primer, or First Reader, is adapted, to existing modes of teaching, and, more especially, to the word method; or, as it might, perhaps, with equal propriety be called, the picture method. This we regard as the true method. The *word* being the unit of signification, the child's interest is enlisted from the very first step. Then the pictures, with which the words are associated, aid very much in deepening the impressions.

The old idea, that children must begin with the smallest possible combination of letters, — which was well enough for the alphabetic mode, — has been discarded; and the child begins at once to read something in which he is interested.

Pictures, which really illustrate the text, and which in this series are very beautiful, play an important part in the education of the child. He sees from the first that words are used as signs of ideas, — each lesson being but an analytical statement of what is given synthetically in the picture.

This, of course, is more strongly marked in the First Part than the others; but it applies to considerable extent to the first three, and, to some extent, to the Fourth Reader.

The gradual introduction of new words, and the regular gradation of the lessons, are marked characteristics of the series. The exercises in articulation and inflection, in the Second Reader, with the more difficult consonant combinations, and exercises in emphasis in the Third, will be found of much service.

The exercises in vocal gymnastics, and the introductory treatise on elocution, by Prof. Bailey, are good in the hands of teachers who know how to use them; but, for those who have but little training in elocution themselves, we think there is danger that an attempt to follow the marking of inflections, etc., will impart a stiff, mechanical style not intended by the author. The fact is, that the modulations of the voice in speaking and reading are so delicate, that they can be but imperfectly hinted at by any system of notation.

This series, as a whole, we think far superior to the Hillard's series now in use. Mr. Hillard's name is a sufficient guarantee that the selections are in good taste; and, if we are not mistaken, they will be found more interesting to pupils for whom the several books are intended than those of the corresponding series which have been so extensively used.

TEN MINUTE TALKS ON ALL SORTS OF TOPICS. By Elihu Burritt. With an Autobiography of the Author. Published by Lee & Shepard.

The autobiography of the "Learned Blacksmith" will be read with interest and profit by the young and middle-aged, who will find much to inspire them to use wisely their spare moments. It is modestly written, and bears the impress of truthfulness on every page. His failures are recorded with the same directness and explicitness as his successes. Through all his "Talks on all Sorts of Topics," the same earnest spirit of philanthropy is manifest; and the perfectly unselfish spirit with which he engaged in any good enter-

prise cannot fail to win love and esteem. Strong as was his desire for knowledge, it yielded to his desire to improve the condition of the laboring classes, and to promote the highest interests of society and nations. Many a young man, upon reading this book, will begin the year with higher purposes and resolves.

PHYSICAL GEOGRAPHY. By Arnold Guyot, author of "Earth and Man." Published by Scribner, Armstrong & Co.

This we believe to be universally conceded to be all and more than it professes to be. The author calls it "an outline of Physical Geography," and says that "a text-book can be but little more than a skeleton," and that "to the intelligent teacher belongs the privilege of clothing these dry bones with forms of life and beauty."

Doubtless in the fulness of the author's knowledge, it appears so to him. We can understand something of the restraint he must have felt for want of room to tell more. But the arrangement is so perfect, and the "strict geographical point of view" has been so constantly preserved, that he has, perhaps, told us more than he is aware of. He has so let us into his method that we read "between the lines."

It is easy, with the material furnished us, and especially when aided by the numerous and beautiful maps and illustrations, to clothe the facts "with forms of life and beauty." It is not only a book for the school-room, but for every family. We may say also, what cannot be said of every really scientific work, that it is a favorite in the school-room. The thanks of every educator in the country are due the author for this work, and to the publishers for the finished style in which it is presented.

THE ATLANTIC MONTHLY (published by H. O. Houghton & Co.) has become a necessity in every family with any pretensions to culture. It is so identified with the house of James R. Osgood & Co. that we confess to some misgivings, when we heard it was to change hands. We are assured, however, that it is to be under the same editorial management; and the favorite contributors — Longfellow, Aldrich, Parton, Whittier, Howells, Warner, Owen, Holmes, Bayard Taylor, Wells, and Eggleston — will still pour their treasures into the "Atlantic."

The January number certainly promises well, containing four chapters of a serial, by Aldrich; "The Golden Wedding of Longwood," by Whittier; "Fox-hunting in England," by George E. Waring; "The Two Homes," by Bayard Taylor; "An Adirondack Sketch," by P. Deming; "Baddeck, and That Sort of Thing," by Warner; "Mose Evans," Part I, by Wm. M. Baker; "Theory and Practice of Local Taxation in the United States," by D. A. Wells; "The Last of the Valeric," by H. James, Jr.; "The History of the Two Pillars," by W. L. Fawcette; "Evolution and Permanence of Type," by Agassiz; and an "Old Year Song," by Holmes.

Whoever has read "Marjorie Daw," — and who has n't? — or *sauntered* with Warner, will not miss this number.

The article by Prof. Agassiz, containing as it does the results of his life-long studies and his matured judgment on the Darwinian theory, will derive additional interest from the death of the great and universally lamented naturalist.

THE ELEMENTS OF LOGARITHMS: with an Explanation of the Three and Four Place Tables of Logarithmic and Trigonometric Functions. By James Mills Peirce, University Professor of Mathematics in Harvard University. Boston: Ginn Brothers. 1873.

Now that some knowledge of the theory and use of logarithms is to be required for admission to Harvard College, provision must be made for the study in the preparatory schools. Prof. J. M. Peirce has accordingly prepared the short treatise which is now before us. He intends the work chiefly for beginners,

but at the same time goes far enough into the subject to claim the attention of more advanced students. Such parts as are not needed by beginners are bracketed, and will cause them no trouble. The subject is set forth in a clear, concise, and interesting manner, and is well worth the attention of all who have this branch to teach.

This work is intended as a companion to the author's "Logarithmic and Trigonometric Functions," published two years ago.

SELECT ORATIONS OF MARCUS TULLIUS CICERO. With explanatory notes. For the use of schools. By Albert Harkness, LL. D., Professor in Brown University. New York: D. Appleton & Co.

The orations contained in this collection are the four against Catiline, the orations for Archias, the Manilian Law, Marcellus, Ligarius, and Deiotarus, and the first Philippic. They are edited and annotated with the author's usual care and ability. We thank him for the few pictures he has introduced, and beg him to give us more the next time. We believe in pictures, from the nursery up to the college.

A book of this class must stand or fall according to the character and value of the annotations; at least, teachers in search of a classical text-book look first at the notes. If these are unsatisfactory, no excellences of text or illustration will compensate for the loss. We are happy to speak a good word for Harkness's notes, both in his Cæsar and his Cicero. The latter we have a class now studying. Once in a while we have the hardihood to suggest a change in, or an addition to, the notes; but, in general, we find that the pupils get just about the kind and amount of help that they need and can use profitably.

COMMON SENSE IN RELIGION: A Series of Essays. By James Freeman Clarke. Published by James R. Osgood & Co.

These essays are certainly very interesting, and contain a great deal of "common sense," — the test to which Mr. Clarke subjects all religions and all creeds. Of course, common sense is liable to the same shortcomings as Democracy, which is based on it; and, as Democracy has not yet given us an Utopia, we suppose that common sense will not, for some time, at least, bring about a millennium, when theologians "shall see eye to eye." Such books as this, however, breathing nothing but the highest and holiest purposes, and tolerant of everything but vice, will hasten it, even if its theology should prove in some respects unsound.

THE POPULAR SCIENCE MONTHLY, for December. Conducted by E. L. Youmans, and published by D. Appleton & Co., is a number of uncommon interest. It contains the concluding article of the series on the "Study of Sociology," by Herbert Spencer; "Furs and their Wearers," illustrated; "Correlation of Vital, with Chemical and Physical Forces;" several Chapters on "Heredity and Race Improvement"; "Tennyson and Botany;" "Preparations for the Coming Transit of Venus;" a fine portrait of Dr. Hooker, with an interesting "Sketch of his Life," and much other matter of interest.

PRONOUNCING HAND-BOOK OF WORDS OFTEN MISPRONOUNCED, AND OF WORDS AS TO WHICH A CHOICE OF PRONUNCIATION IS ALLOWED. By Richard Soule and Loomis J. Campbell. Published by Lee & Shepard.

This is a beautiful little book, fit to be made, and very fittingly made. It shows an accurate knowledge of English Orthoëpy, — a rare accomplishment, even among scholars, — and good judgment in the selection of words.

All teachers should have it; and every one will be benefited by it who wishes to acquire an accurate pronunciation.

We all trip on some words, — not unfrequently familiar words; and taking out those most liable to be mispronounced from the great lumbering dictionary, and

presenting them as we have them here, in a compact form, is a real service to us all. We hope it will have a large sale.

SCIENCE PRIMERS. Edited by Profs. Huxley, Roscoe, and Balfour Stewart. With illustrations. Published by D. Appleton & Co.

"The object of the authors has been to state the fundamental principles" [of science] "in a manner suited to pupils of an early age." By a simple series of experiments, they aim at imparting knowledge in such a manner as to discipline the mind to habits of orderly and accurate observation, and to scientific methods.

We have received three numbers of these primers, — one on Chemistry, one on Physics, and the other on Physical Geography. We think, judging from these, that the authors have been entirely successful in what they aimed at.

Most of the experiments can be performed with very little apparatus; and the directions are so very minute and clear that any teacher may perform them with success.

In this manner, if any, is science to be introduced into our common schools; and it is certainly an encouraging sign, when we see men like Huxley, Roscoe, and Stewart preparing Science Primers for the young.

The January number of "Lippincott's Magazine" contains: 1. The New Hyperion. — From Paris to Marly by Way of the Rhine. VII. The Seductions of Baden-Baden. Illustrated. By Edward Strahan. 2. The Trianon Palaces.—The Summer Residence of the Kings of France. Illustrated. By Marie Howland. 3. The Necklace of Pearls. By R. H. Stoddard. 4. A Wife's Revenge. A story. By the author of "Blindpits and Quixstars." 5. Japanese Fox-Myths. By William E. Griffis. 6. Chester Harding, the Self-made Artist. By Osmond Tiffany. 7. The White Doe: A Legend of Spanish Florida. A. D. 1540–1575. By Will Wallace Harney. 8. A Princess of Thule. Conclusion. By William Black. 9. Monte Carlo and its Frequenters. By R. Davey. 10. My Christmas Ball. A story. By Lucy H. Hooper. 11. A Statue of Shakespeare. By William R. O'Donavan. 12. Three French Marriages. By Mary E. Blair. 13. Our Monthly Gossip. 14. Literature of the Day.

This profusely illustrated magazine begins the year with a number of surpassing beauty, and a rich table of contents. The readers of the magazine for 1874 are promised contributions from some of the very best writers; and the fact that George MacDonald will commence a story in the February number will alone make it a necessity with those acquainted with his writings, or who heard his charming lectures while in this country.

THE ST. NICHOLAS. Scribner's Illustrated Magazine, for Girls and Boys. Conducted by Mary Mapes Dodge.

The arrangement by which "Our Young Folks" was merged in the "St. Nicholas" was at first looked upon with distrust by the boys and girls of our acquaintance. When, however, "St. Nicholas" came to them in its holiday dress, the vote was unanimous that the New York style was more becoming than the former, and they were more than reconciled to the change. From the numbers already issued, and the contributors, among whom we find Trowbridge, Warner, etc., we believe that the "St. Nicholas" is sure to be one of the most popular magazines for young folks of all ages.

It is certainly the most beautiful, and, from the names of its contributors, we believe it will be the best thing, of its kind.

OLD AND NEW, for January, 1874, is an excellent number. It contains a short article on the "Virginius," which is worth all we have seen on the subject elsewhere, and more. The first five chapters of the "Way we Live Now," by Anthony Trollope; an able article on "Wall Street, and The Crisis"; No. 2 of the Sketching Club, by Tyrwhitt; "A Civil Servant," by E. E. Hale; "The Boston Tea-Party," by F. S. Drake; and other papers of interest, covering almost every department of literature.

STORIES OF A GRANDFATHER ABOUT AMERICAN HISTORY. By N. S. Dodge. Published by Lee & Shepard.

This will be found an interesting and instructive book for the boys and girls, to whom it is dedicated.

It is not unlikely that these stories may do more to awaken an interest in history than the more formal statement of facts, which constitute so large a proportion of the history lessons in many schools. Without, however, undervaluing the formal study of history, as a school exercise, it is evident that an acquaintance with the interesting stories add much to the interest of the more systematic recitation. When a grandfather is telling *his story* to the boys and girls, he is allowed a little more latitude than the schoolmaster; and, if he colors facts a little, perhaps there is as much gained in interest as is lost in accuracy.

It is safe to say that such reading as this will lead directly to a more careful and extended study of American history.

AN ELEMENTARY ALGEBRA. By D. B. Hagar, PH. D. Published by Cowperthwait & Co., Philadelphia.

This work bears the characteristic marks of the author's series of arithmetics.

The same clearness of statement is manifest, and the same natural arrangement; while the character of the exercises is such as to illustrate the principles under discussion, rather than an attempt to puzzle pupils with a difficult application of them.

In its method it is strictly inductive, and no definitions or rules are given till the pupil is prepared to understand them.

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